PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF TRANSMITTAL
OF COPIES OF TRANSLATION
OF THE INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY
(CHAPTER I OR CHAPTER II
OF THE PATENT COOPERATION TREATY)
(PCT Rules 44*bis*.3(c) and 72.2)

To:

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Chiyoda-ku, Tokyo
1010032
JAPON

Date of mailing *(day/month/year)* 31 August 2006 (31.08.2006)	
Applicant's or agent's file reference GP04-1028PCT	**IMPORTANT NOTIFICATION**
International application No. PCT/JP2004/018928	International filing date *(day/month/year)* 17 December 2004 (17.12.2004)
Applicant CELLFREE SCIENCES CO.,LTD. et al	

1. **Transmittal of the translation to the applicant.**

☑ The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter **I**).

☐ The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter **II**).

2. **Transmittal of the copy of the translation to the designated or elected Offices.**

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following designated or elected Offices requiring such translation:

None

The following designated or elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

AE, AG, AL, AM, AP, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EA, EC, EE, EG, EP, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OA, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

3. **Reminder regarding translation into (one of) the official language(s) of the elected Office(s).**

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability (Chapter II).

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned within the applicable time limit (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Yoshiko Kuwahara

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44*bis*)

Applicant's or agent's file reference GP04-1028PCT	**FOR FURTHER ACTION**	See item 4 below
International application No. PCT/JP2004/018928	International filing date *(day/month/year)* 17 December 2004 (17.12.2004)	Priority date *(day/month/year)* 26 December 2003 (26.12.2003)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant CELLFREE SCIENCES CO.,LTD.		

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 *bis*.1(a).

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

   In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

☒	Box No. I	Basis of the report
☐	Box No. II	Priority
☐	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
☐	Box No. IV	Lack of unity of invention
☒	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
☐	Box No. VI	Certain documents cited
☐	Box No. VII	Certain defects in the international application
☐	Box No. VIII	Certain observations on the international application

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44*bis*.3(c) and 93*bis*.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44*bis*.2).

	Date of issuance of this report 22 August 2006 (22.08.2006)
The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Yoshiko Kuwahara
Facsimile No. +41 22 338 82 70	e-mail: pt07@wipo.int

Form PCT/IB/373 (January 2004)

PATENT COOPERATION TREATY

TRANSLATION

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing *(day/month/year)*	
Applicant's or agent's file reference **GP04-1028PCT**	**FOR FURTHER ACTION** See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/JP2004/018928	**17.12.2004**	**26.12.2003**

International Patent Classification (IPC) or both national classification and IPC

Applicant
CELLFREE SCIENCES CO.,LTD.

1. This opinion contains indications relating to the following items:

☒	Box No. I	Basis of the opinion
☐	Box No. II	Priority
☐	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
☐	Box No. IV	Lack of unity of invention
☒	Box No. V	Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
☐	Box No. VI	Certain documents cited
☐	Box No. VII	Certain defects in the international application
☐	Box No. VIII	Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/JP	Authorized officer
Facsimile No.	Telephone No.

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/JP2004/018928

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

☐ a sequence listing

☐ table(s) related to the sequence listing

b. format of material

☐ in written format

☐ in computer readable form

c time of filing/furnishing

☐ contained in the international application as filed.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No
PCT/JP2004/018928

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	2, 6-18	YES
	Claims	1, 3-5, 19-24	NO
Inventive step (IS)	Claims	2, 6-18	YES
	Claims	1, 3-5, 19-24	NO
Industrial applicability (IA)	Claims	1-24	YES
	Claims		NO

2. Citations and explanations:

Document 1: JP 2000-236896 A (Mitsubishi Chemical Corp.) 5 September 2000, Full text (Family: none)

Document 2: Madin K. et al., A highly efficient and robust cell-free protein synthesis system prepared from wheat embryos: plants apparently contain a suicide system directed at ribosomes, Proc. Natl. Acad. Sci. USA, 2000, Vol. 97, p. 559-564.

Document 3: Kawarasaki Y. et al., Phosphatase-immunodepleted cell-free protein synthesis system, J. Biotechnol., 1998, Vol. 61, p. 199-208

Document 4: Kang S. H. et al., An efficient cell-free protein synthesis system using periplasmic phosphatase-removed S30 extract, J. Microbiol. Methods, 2000, Vol. 43, p. 91-96

•The inventions of claims 1, 3, 4, 19, and 24 lack novelty and an inventive step with respect to the inventions described in documents 1 and 2 cited in the international search report.

This authority finds that documents 1 and 2 describe cell-free protein synthesis methods using wheat germ extract wherein tritin contained in the endosperm ingredients is removed.

In this context the inventions of the above claims are one and the same as the inventions described in documents 1 and 2.

•The inventions of claims 1, 3, and 19-24 lack novelty and an inventive step with respect to the invention described in document 3 cited in the international search report.

This authority finds that document 3 describes a cell-free protein synthesis method using wheat germ extract wherein phosphatases that inhibit cell-free synthesis by ATP metabolism are removed, and the wheat germ extract wherein these phosphatases are removed.

In this context, this authority finds that a change in ATP metabolism occurs and the phosphorylation of saccharides via ATP undergoes some kind of regulation in the wheat germ extract described in document 3 wherein the phosphatases are removed. Therefore, the inventions of the above claims cannot be distinguished from the invention described in document 3.

(Continued in Supplemental Box)

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of: Box V.

•The inventions of claims 1, 5, and 19-24 lack novelty and an inventive step with respect to the invention described in document 4 cited in the international search report.

This authority finds that document 4 describes a cell-free protein synthesis method using *E. coli* extract wherein phosphatases that inhibit cell-free synthesis by ATP metabolism are removed, and the *E. coli* extract wherein these phosphatases are removed.

In this context, this authority finds that a change in ATP metabolism occurs and the phosphorylation of saccharides via ATP undergoes some kind of regulation in the *E. coli* extract described in document 4 wherein the phosphatases are removed. Therefore, the inventions of the above claims cannot be distinguished clearly from the invention described in document 4.

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2000-236896
(43)Date of publication of application : 05.09.2000

(51)Int.Cl. C12P 21/00
C12N 5/04

(21)Application number : 11-046379
(22)Date of filing : 24.02.1999

(71)Applicant : MITSUBISHI CHEMICALS CORP
ENDO YAETA
(72)Inventor : ENDO YAETA

(54) EMBRYO BUD EXTRACT FOR SYNTHESIS OF CELL-FREE PROTEIN, ITS PRODUCTION AND SYNTHESIS OF PROTEIN USING THE SAME

(57)Abstract:
PROBLEM TO BE SOLVED: To obtain an embryo bud extract free from albumen, having high success rate of protein synthesis by neutralization of activity inhibiting protein synthesis reaction induced in crushing by subjecting an aqueous solution obtained by crushing plant seeds and extracting the crushed seeds to supersonic treatment.
SOLUTION: Seeds of a plant of wheat, barley, rice, corn, spinach, or the like, are mildly crushed by a crusher, and then, sieved to afford crude embryo bud fraction and embryo having germination ability is recovered from floated fraction by flotation using a mixed solution of carbon tetrachloride with cyclohexane and dried at room temperature and impurities such as seed coat are absorbed and removed by an electrostatic charged body. Then, the treated embryo is suspended in an aqueous solution containing a nonionic surfactant, and washing is repeated until a washing solution does not become cloudy and embryo component is completely removed to afford embryo bud, which is then added to a buffer, or the like, and stirred and centrifuged and the supernatant is collected to provide the objective embryo bud extract for synthesis of cell-free protein having high synthetic efficiency.

LEGAL STATUS

[Date of request for examination]	06.10.2004
[Date of sending the examiner's decision of rejection]	17.05.2005
[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]	
[Date of final disposal for application]	
[Patent number]	3753358
[Date of registration]	22.12.2005
[Number of appeal against examiner's decision of rejection]	2005-11123
[Date of requesting appeal against examiner's decision of rejection]	15.06.2005
[Date of extinction of right]	

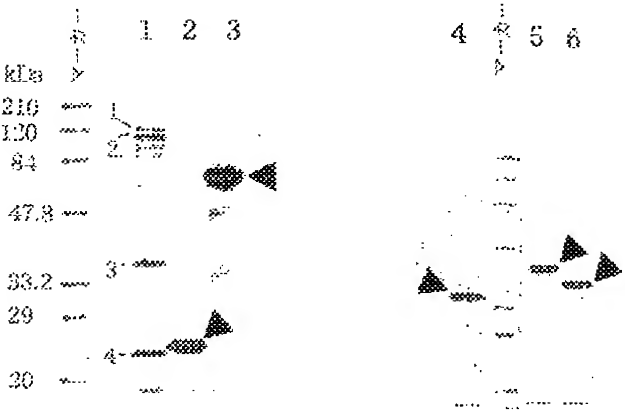
* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

CLAIMS

[Claim(s)]
[Claim 1] The germ extract for acellular protein synthesis characterized by not including the albumen of a vegetable seed.
[Claim 2] The germ extract according to claim 1 by which it is choosing [a vegetable seed / from wheat, a barley, a rice, a cone, and a spinach] characterized.
[Claim 3] The manufacture approach of the germ extract characterized by obtaining the germ which does not contain albumen by ultrasonicating in a water solution.
[Claim 4] About sonication, they are a surfactant and/or a formycin. The manufacture approach of the germ extract according to claim 3 characterized by carrying out in the water solution containing 5'-phosphate (Formycin 5'-phosphate).
[Claim 5] The synthetic approach of the protein which uses a germ extract according to claim 1 or 2.
[Claim 6] The synthetic approach of the protein according to claim 4 characterized by carrying out by amino acid and the continuation supply system of an energy source.
[Claim 7] The synthetic approach of the protein according to claim 5 characterized by using dialysis.

[Translation done.]


1 2 3
4 5 6
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210
120
84
47.8
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